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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/807,775

03/23/2004

Glenn W. Gengel

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08/18/2005

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EXAMINER

MULLEN, THOMAS J

ART UNIT

PAPER NUMBER

2632

DATE MAILED: 08/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/807,775

Applicant(s)

GENGEL ET AL.

Examiner

Thomas J. Mullen, Jr.

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2632

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 2/10/05 & 7/11/05.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-69 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 2,3,5,7,9-12,14,15,17-32,34,35,37-41,43,44 and 46-68 is/are allowed.
- 6) ☒ Claim(s) 4,6,8,16,36,45 and 69 is/are rejected.
- 7) ☒ Claim(s) 13,33 and 42 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 February 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 2/10/05, 3/10/05, 4/21/05, - total 7 pages.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

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1. The amendments filed 2/10/05 and 7/11/05 have been fully considered. The replacement drawing sheets filed 2/10/05 are approved.

2. The disclosure is objected to because of the following informalities:
specification paragraph 0045 as amended, line 7, it appears that "flushed flush" should be simply --flush--.

Appropriate correction is required.

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. Claims 13, 33 and 42 are objected to under 37 CFR 1.75(a) for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 13, 33 and 42, "comprise" (line 1) should be --comprises--, and before "semiconducting" (line 2) should be inserted --and-- (see paragraph 7 in the last Office action).

5. Claims 8, 16, 36 and 45 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 8, 16, 36 and 45, as to the phrase "electrically connected to the integrated circuit on opposite corners or in diagonal corners of the integrated circuit", it is unclear if "on opposite corners" and "in diagonal corners" mean the same or different things, with respect to where the electrical connections are between the conductive elements and the integrated circuit; in particular, it is unclear what is meant by "diagonal corners" per se, and it is unclear whether "opposite corners" can mean corners at opposite ends but on the same side (e.g., upper left and lower left), or does it necessarily mean corners at opposite ends and on opposite sides (e.g. upper left and lower right)--i.e., "diagonally opposite" (or "diagonally opposed") corners.

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6. Claims 69 and 4 are rejected under 35 U.S.C. 102(b) as being anticipated by either Marsh et al (US 5566441) or Moskowitz et al (US 5528222).

Note in Marsh et al, Figs. 4 and 6, the Abstract and col. 3, lines 20-42. Marsh et al disclose an "RFID" tag comprising a substrate 28 which may be "cardboard packaging material", which (after attachment of the operative components of the tag thereto) may be "folded into boxes", etc (col. 3, lines 58-60); i.e., the substrate 28 is inherently "flexible" (aside from the boxes being "fold(able)", it is generally known that these types of boxes are made from a generally thin sheet of cardboard which is at least somewhat bendable or flexible). The tag further comprises an integrated circuit (IC) 10, "embedded" within the substrate such that the top surface of the IC is "coplanar" with the substrate (as clearly shown in Fig. 6--see col. 4, lines 1-3); and the rest of the IC is "recessed below a surface" of the substrate; and at least one conductive element 18 formed on the substrate and being electrically connected to the IC (via contacts 12 and 16), the conductive element serving as an "antenna" (i.e. "patch antenna") for the tag.

Note in Moskowitz et al, Figs. 3-4, the Abstract and col. 4, line 61 to col. 5, line 25. Moskowitz et al disclose an "RFID" tag comprising a "flexible" substrate (320 or 420); integrated circuit (IC) (310 or 410), "embedded" within the substrate such that the top surface of the IC is "coplanar" with the substrate (see lines 3-4 of the Abstract, col. 4, lines 32-33, and col. 5, lines 20-21--also, note in Fig. 3 that a top surface of IC 310 is "coplanar" with a portion of the thickness of the substrate 320), and the rest of the IC is "recessed below a surface" of the substrate; and at least one conductive element (330 or 430) formed on the substrate and being electrically connected to the IC (via contacts 325 or 425), the conductive element serving as an "antenna" for the tag.

Regarding claim 4, as noted above both Marsh et al and Moskowitz et al disclose an IC having at least two "interconnection pads" (12,16 in Marsh et al; 325 or 425 in Moskowitz et al).

7. Claim 6 is rejected under 35 U.S.C. 102(b) as being anticipated by Marsh et al.

Marsh et al further teaches that the "conductive element" 18 may be formed by "printing a conducting ink" onto the substrate 28 (col. 4, lines 13-15), or formed as a "conductive foil layer" (col. 4, lines 40-42).

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8. Claim 8 is rejected under 35 U.S.C. 102(b) as being anticipated by Moskowitz et al.

Moskowitz et al further teaches, in a pair of embodiments (Figs. 4 and 5), forming two "conductive elements" (430 in Fig. 4, 530 and 531 in Fig. 5) on the substrate (420 or 520) which are electrically connected to the IC (410 or 510) "on opposite corners or in diagonal corners" of the IC (note the configuration of the contacts 425 or 525 with respect to the ICs).

9. Claims 2-3, 5, 7, 9-12, 14-15, 17-32, 34-35, 37-41, 43-44 and 46-68 are allowed.

Claims 13, 16, 33, 36, 42 and 45 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph and/or objections under 37 CFR 1.75(a) set forth in this Office action.

10. Applicant's arguments filed 2/10/05 have been fully considered but they are not persuasive.

Regarding the indefiniteness (112) issue in claims 8, 16, 36 and 45, the language in these claims is considered vague because, (i) the phrase "diagonal corners" fails to adequately set forth whether "diagonal" describes a characteristic of each corner of the IC individually, or describes a relationship between different corners of the IC (for that matter, note that the claims do not specify that the IC is square or rectangular and has four total corners); and, (ii) the phrase "opposite corners" fails to adequately set forth which corners of the IC (out of, presumably, four total corners in a square or rectangular configuration) may be considered "opposite" each other. The following is suggested wording for these claims after the preamble:

...wherein the RFID tag includes two conductive elements (or traces) formed on the substrate on opposite sides of the integrated circuit and wherein the two conductive elements (or traces) are respectively electrically connected to the integrated circuit [on opposite] in transversely opposed corners or in diagonally opposed corners of the integrated circuit.

Regarding the art rejections based on Marsh et al or Moskowitz et al, applicant merely provides a broad argument that neither Marsh et al nor Moskowitz et al teach "that the integrated circuit is embedded within the flexible substrate such that the integrated circuit is recessed below a surface of the substrate" (i.e., applicant merely identifies the subject matter of claim 69 which is additional to that recited in original claim 1, without explaining why the cited art fails to teach

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this feature). However, as mentioned in paragraph 6 above, each of Marsh et al and Moskowitz et al implicitly provide this teaching, because if the IC is "embedded within" the substrate such that the top surface of the IC is "coplanar with" (a surface, or "plane", of) the substrate--as recited in the claim--it appears to be necessarily the case that the portion of the IC which is below the "top surface" thereof must also be below the "coplanar" surface or plane of the substrate (with at least a portion of the IC being within the cross-sectional area of the substrate), and thus at least a portion of the IC must be "recessed below" the "coplanar" surface or plane of the substrate.

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The art cited by applicant 2/10/05, 3/10/05 and 4/21/05 is made of record; redundant citations, and citations of art already cited by the examiner, have been crossed out.

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

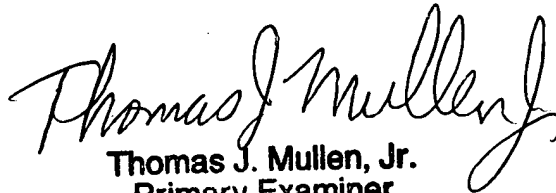
13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thomas J. Mullen, Jr. whose telephone number is 571-272-2965. The examiner can normally be reached on Monday-Thursday from 6:30 AM to 4 PM. The examiner can also be reached on alternate Fridays.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel Wu, can be reached on (571) 272-2964. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 571-272-2600.

TJM


Thomas J. Mullen, Jr.
Primary Examiner
Art Unit 2632